



## INVITATION TO BID (ITB)

**No.: 274-2026-14-WR**

### **Title: 48-Inch Plug Valve for Resource Recovery Division**

Notice is hereby given that the City of Raleigh, North Carolina is seeking sealed bids for a 48-inch plug valve for the Resource Recovery Division. A contract will be awarded for a term of one-time purchase, subject to contract performance and annual appropriation by the Raleigh City Council. All listed times herein are Eastern Time (ET), whether Eastern Standard Time (EST) or Eastern Daylight Time (EDT), as applicable.

<b>Bids Accepted Until:</b>	<b>2:00:00 PM, January 28, 2026</b>
<b>Bids Should be Addressed to:</b>	City of Raleigh, Procurement Division Attn: Wes Rhodes, Procurement Analyst
<b>Hand-Deliver to:</b>	222 West Hargett Street, Suite 502 Raleigh, North Carolina 27601
	<b>or</b>
<b>Mail to:</b>	PO Box 590 Raleigh, North Carolina 27602-0590

The bidder is solely and strictly responsible for submitting a response to this ITB to the City of Raleigh, Procurement Division, on or before the stipulated date and time and as specified herein. Any bids received after the stipulated date and time will not be accepted, nor opened, and will be returned.

## BID RESPONSE FORM

**Bid No.:** 274-2026-14-WR  
**Bid Title:** 48-Inch Plug Valve for Resource Recovery Division

Pursuant to General Statutes of North Carolina, Section 143-129, as amended, sealed bids are invited and, subject to the conditions herein, will be received by the City of Raleigh Procurement Division. The sealed bids will be publicly opened for furnishing the apparatus, supplies, materials, equipment and/or repair work and services as described herein.

In compliance with this Invitation for Bids, and subject to all the conditions thereof, the undersigned Supplier offers and agrees, if this bid be accepted, to furnish and deliver any or all items upon which prices are bid, at the prices set opposite each item within the time specified herein. By executing this bid, the undersigned Supplier certifies that this bid is submitted competitively and without collusion. Furthermore, by executing this bid, the undersigned certifies to the best of Supplier’s knowledge and belief, that it and its principals are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal or State department or agency.

**Failure to execute/sign the bid prior to submittal shall render the bid invalid, and it WILL BE DEEMED NON-RESPONSIVE and WILL BE REJECTED. Late bids cannot be accepted.**

COMPANY NAME:		
STREET ADDRESS:		
CITY:	STATE:	ZIP CODE:
NAME AND TITLE OF PERSON SIGNING ON BEHALF OF COMPANY:		
COMPANY’S AUTHORIZED SIGNATURE:	DATE:	
CONTACT NAME (if different from above):		
EMAIL ADDRESS:	TELEPHONE NUMBER:	

**OFFER VALID FOR AT LEAST 90 DAYS FROM DATE OF BID OPENING**

## **CITY OF RALEIGH NON-DISCRIMINATION ASSURANCES**

To the extent permitted by North Carolina law, the parties hereto for themselves, their agents, officials, employees and servants agree not to discriminate in any manner on the basis of race, color, creed, national origin, sex, age, handicap, or sexual orientation with reference to the subject matter of this Contract. The parties further agree, to the extent permitted by law, to conform with the provisions and intent of City of Raleigh Ordinance 1969-889, as amended. This provision is hereby incorporated into this Contract for the benefit of the City of Raleigh and its residents, and may be enforced by action for specific performance, injunctive relief, or other remedy as provided by law. This provision shall be binding on the successors and assigns of the parties with reference to the subject matter of this Contract.

COMPANY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
(President/Authorized Officer)

TITLE: \_\_\_\_\_

## CITY OF RALEIGH BID FORM

**ITB No:** 274-2026-14-WR

**ITB Title:** 48-Inch Plug Valve for Resource Recovery Division

ITEM NO.	QTY	DESCRIPTION	TOTAL PRICE
1	1	48" Eccentric Plug Valve with electric actuator and accessories as noted and specified in the specifications	\$
2	1	Shipping (FOB Destination, Freight Prepaid and Allowed)	\$
<b>TOTAL BID PRICE:</b>			<b>\$</b>

<b>LEAD TIME (IN WEEKS):</b>	
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NOTICE TO BIDDERS: Do not include taxes in your bid pricing. Any and all tax imposed upon any article on which you are bidding are only to be shown as separate line items on invoices, and in no case are taxes to be included with your bid price. Failure to comply with these conditions will be considered grounds for rejection.

BIDS WILL BE CONSIDERED ONLY IF SUBMITTED ON THIS FORM. EMAIL AND FAX SUBMISSIONS ARE NOT ACCEPTABLE.

COMPANY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
(President/Authorized Officer)

TITLE: \_\_\_\_\_

## CITY OF RALEIGH INSTRUCTIONS TO BIDDERS

Carefully review all provisions and attachments of this ITB prior to completion and submission of bids. Each bid constitutes an offer and may not be withdrawn except as provided herein.

**1. PURPOSE**

The purpose of this ITB is to provide general and specific information for the use by bidders in submitting bids to supply the City of Raleigh with the apparatus, supplies, materials, equipment, and/or services described herein. All bids and any resulting contract(s) shall be governed by City policy and/or Section 143-129 of the North Carolina General Statutes.

**2. ITB CONTACT**

All questions, concerns, or requests for additional information shall be directed to the City of Raleigh Procurement Division, attention of the ITB Agent identified below

ITB Agent:     Wes Rhodes  
                   Procurement Analyst  
                   E-Mail: wes.rhodes@raleighnc.gov

**3. ITB SCHEDULE**

Listed below are the dates and times by which stated actions must be taken or completed. The City reserves the right, in its sole discretion, to modify any of the dates and times. All listed times are Eastern Time (ET), whether Eastern Standard Time (EST) or Eastern Daylight Time (EDT), as applicable.

ACTION	DATE	TIME
<b>ITB Published:</b>	12/29/2026	N/A
<b>Pre-Bid Conference:</b>	N/A	N/A
<b>Bidder Written Questions Due:</b>	01/14/2026	2:00:00 PM
<b>Questions and Answers Addendum Published:</b>	01/21/2026	N/A
<b>Bids Due:</b>	01/28/2026	2:00:00 PM
<b>Bid Opening:</b> ↳ <b><u>Location</u></b> 222 West Hargett Street, Suite 502 Raleigh, North Carolina 27601	01/28/2026	2:00:00 PM

**4. PRE-BID CONFERENCE**

There will be no pre-bid conference for this ITB.

**5. BIDDER QUESTIONS**

- a) The City is not liable for interpretations/misinterpretations or other errors or omissions made by the bidder in responding to this ITB. The bidder shall examine this ITB to determine if the City’s requirements and terms and conditions are clearly stated. If, after examination of the various requirements and terms and conditions of this ITB, the bidder believes there are any requirements or terms and conditions which remain unclear or which restrict competition, the bidder may request, in writing, that the City clarify the requirement(s) and terms(s) and condition(s) specified by the bidder. The bidder must provide the Section(s), Subsection(s), Paragraph(s), and page number(s) that identify the requirements or conditions questioned by the bidder.

- b) Requests for clarification and technical questions to this ITB must be submitted in writing and be received by the City not later than the ITB schedule shown above in Section 3, entitled "ITB Schedule", for the submittal of written inquires. The bidders' failure to request clarification and submit questions by the date in the ITB Schedule above shall be considered to constitute the bidders' acceptance of all City's requirements and terms and conditions. The City shall issue addenda reflecting questions and answers to this ITB, if any, and shall be posted to the IPS website at [North Carolina electronic Vendor Portal](#).

#### 6. **ADDENDUM**

Bidders are solely responsible for making sure that all addenda have been received prior to submission of their bid. All addenda to this ITB issued by the City shall be posted to the IPS website at [North Carolina electronic Vendor Portal](#). All such addenda shall become part of the bid. The **bidder is to sign any and all addenda issued for the bid and submit it with the bid**. Failure to do so risks rejection of the bid.

#### 7. **BID OPENING**

- a) All bids will be opened and read on the date and at the time and place specified in the ITB Schedule. No official award will be made at the bid opening. All bidders are welcome to attend the bid opening. **LATE BIDS WILL NOT BE OPENED OR ACCEPTED.**
- b) Bidders may not review or request copies of bids at the bid opening. A time must be scheduled to meet with the Procurement Manager and/or ITB Agent for this purpose.
- c) Bids will be examined by the Procurement Manager and/or ITB Agent and the using department officials promptly after the opening and an award made at the earliest possible date. No bids may be withdrawn after bid opening.

#### 8. **HOW TO PREPARE BID**

Bidders are encouraged to review carefully all provisions and attachments of this document prior to completion. Each bid constitutes an offer and may not be withdrawn except as provided herein. Also, prices are to remain firm for the period stated herein.

a) **Bid Form**

Submit all prices and offers on the **BID FORM(s)** provided herein. All bids must be submitted and signed by the bidder or his or her authorized representative with all erasures or corrections initialed and dated by the authorized representative of the bidder.

b) **Signature**

**The bid and all required bid documents must be signed by an authorized official of the company where such signatures are required.** The bid may be rejected if it shows omissions, alterations of form, additions not called for, conditional bid, or any irregularities.

c) **Taxes**

**Do not include taxes in your bid prices.** Taxes must be itemized and added to invoices separately when invoicing the City. The City is required to pay sales tax. The City is exempt from Federal Excise Tax and has a Federal Tax number.

d) **Non-Discrimination**

The **NON-DISCRIMINATION ASSURANCES** form included in the bid package is a condition of the bid and must be completed and signed by the bidder.

e) **MWBE Policy**

The City of Raleigh prohibits discrimination in any manner on the basis of race, color, creed, national origin, sex, age or handicap or sexual orientation and will pursue an affirmative policy of fostering, promoting and conducting business with women and minority owned business enterprises. The City of Raleigh encourages participation by certified minority and women-owned businesses. If there are any questions, Contact the MWBE Program Manager, PO BOX 590 Raleigh, NC 27602, [mwbe@raleighnc.gov](mailto:mwbe@raleighnc.gov), or 919-996-4330.

f) **Sustainability**

In accordance with the City of Raleigh 2007-2009 City Council Mission Statement, the City recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a diverse, equitable, and vibrant community and economy. The City recognizes that the types of products and services the City buys have inherent social, human health, environmental and economic impacts, and asks that all Suppliers and bidders providing and proposing products and services to the City, be mindful of the City's Sustainability Policy and provide and propose products and services that embody the City's commitment to sustainability whenever possible.

g) **Iran Divestment**

Bidder certifies that it is not on the Final Divestment List as created by the State Treasurer pursuant to N.C.G.S. § 147-86.55, et seq. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. § 147-86.59, CONTRACTOR shall not utilize in the performance of the contract any subcontractor that is identified on the Final Divestment List.

h) **Companies that Boycott Israel**

The bidder certifies that it has not been designated by the North Carolina State Treasurer as a company engaged in the boycott of Israel pursuant to N.C.G.S. 147-86.81.

9. **HOW TO SUBMIT BID**a) **SUBMIT SEALED BIDS ON THE BID FORM PROVIDED HEREIN.**

b) **Provide (2) complete sets of your bid on the BID FORM PROVIDED HEREIN in hard copy paper format (on 8-1/2" x 11" size paper, only bound with a single staple in the upper left corner or with a single removable clip—no 3-ring binders) and must be SEALED in an envelope. NO EMAIL OR FAX BIDS WILL BE ACCEPTED.** All Formal Bids (estimated to be greater than \$90,000) must be submitted in a sealed opaque envelope, plainly marked with the bid number, and date and time to be opened as shown below.

c) All bids must be hand delivered or mailed as follows in sufficient time to ensure receipt by the Procurement Manager or ITB Agent on or before the time and the date specified on the ITB Schedule. Bids not received by the time and date specified on the ITB Schedule will not be opened or considered, unless the delay is a result of the negligence of the City of Raleigh, its agents, or assigns.

**Hand Delivery**

City of Raleigh  
Procurement Division  
Attn: Wes Rhodes, Procurement Analyst  
222 West Hargett Street, Suite 502  
Raleigh, North Carolina 27601

**Mail Delivery**

City of Raleigh  
Procurement Division  
Attn: Wes Rhodes, Procurement Analyst  
PO Box 590  
Raleigh, North Carolina 27602

**10. AWARD OF BID**

- a) Standard of Bid Award Acceptance. The City reserves the right to reject any or all bids and to waive any irregularities or technicalities in bids received whenever such rejection or waiver is in the best interest of the City of Raleigh. The award shall be made to the lowest, responsive, responsible bidder, or bidders, taking into consideration quality, performance and the time specified in the bid for the performance of the contract.
- b) Bid Prices. All items and products proposed in response to this ITB are to be new, in un-used condition unless otherwise noted in the Minimum Specifications. All prices proposed in response to this ITB are to include all transport, freight and fuel surcharges, and be delivered FOB destination, freight prepaid and allowed to the location provided on the City Purchase Order. All items are to be packaged, and shipped or delivered safely in a protective carton, fully assembled and serviced, ready for use and operation. Bidders must submit product literature and manufacturer's specifications with their bid proposal. All supplies, equipment, and apparatus must meet all Federal, State, and Local safety regulations, requirements, and guidelines, such as OSHA, EPA, US DOT, NC-DOT, NFPA, UL, etc., if so regulated.
- c) Order of Precedence. In cases of conflict between sections and provisions within this ITB, the Order of Precedence will be 1) the Special Conditions section specific to the Bid; 2) the Minimum Specifications section specific to the Bid, 3) the City of Raleigh Terms and Conditions; and 4) the Instructions to Bidders section of this ITB.
- d) Payment Terms. Payment terms of Net 30 days from the date of receipt of invoice, or upon acceptance of goods whichever is later, will apply to all invoices. Payment term discounts will be allowed for prompt payments, but will not be a consideration for award. All invoices are to be emailed to [accountspayable@raleighnc.gov](mailto:accountspayable@raleighnc.gov), or delivered to City of Raleigh, Accounts Payable Division, PO Box 590, Raleigh, NC 27602-0590.
- e) Bid Award Approval. The City Manager has delegated authority from the City Council to award bids for supplies, equipment, and apparatus greater than \$90,000. Bids will be approved and awarded by the City Manager upon the recommendation by the Procurement Manager.

**11. OBJECTION TO THE SPECIFICATIONS**

It is not the intent of the bid specifications to exclude or limit competition or favor any particular supplier or product. If there is an objection to any of the specifications or requirements listed herein, the bidder must notify the City of Raleigh Procurement Manager, in writing, stating and listing the specifications and objections, no later than five (5) working days prior to the bid opening date. If a pre-bid meeting has been scheduled, any objections must be presented in writing at that time. The objections stated must pertain both to form and substance of the ITB. Failure to object in accordance with the above procedure shall constitute a waiver on the part of the bidder to protest the solicitation. All concerns, questions, clarifications, or other correspondence must be directed only to the City of Raleigh Procurement Manager. Information obtained from other sources will not be considered in the evaluation and award of this ITB.

**12. SUBMITTING A PROTEST TO THE BID AWARD**

A bidder wishing to express a concern or complaint, and file a protest to a Bid Award, must submit in writing the reasons, information, and documentation for the protest, to the Procurement Manager within 48 hours from the date of the Notice of Intent to Award. In the event of a protest, the Procurement Manager will notify the Chief Financial Officer and the City Manager of the protest and provide the information for both the recommended award and the protest. The City Manager will make a final decision for the bid award. The protesting bidder may appeal the decision to the City Council.

**13. FAILURE TO BID**

If the bid is not submitted, bidder should return the attached “NO BID RESPONSE” sheet, stating the reasons therefore, and indicate whether the business should be retained or removed from the City’s Bidder’s list.

**14. ERRORS IN BIDS**

Bidders or their authorized representatives are expected to understand the conditions, requirements and specifications before submitting bids. Failure to do so will be at the bidders owns risk. In case of an error in the extension of prices on the bid, the unit price shall govern.

**15. ALTERNATIVE BIDS**

DO NOT submit alternate bids unless called for on the bid proposal form. Alternate bids are those that are not identical by manufacturer and model to what is specified or has substantially different specifications. When alternate bids are requested, the bidder must submit documentation as a part of the bid to show that the product is comparable to the item(s) referred to in the specifications. Bidders may submit multiple bids on various manufacturers’ brands/models meeting specifications if no specific manufacturer/model has been specified.

**16. BID OPTIONS**

The City reserves the right to request pricing on optional equipment or additional items along with the pricing for the main or primary product or items. At the discretion of the City, some or all of the options requested may or may not be added and purchased based upon necessity and the availability of budgeted funds. The Bid Award will be made to the lowest responsible bidder for the main or primary product or items listed on the Bid Proposal Form. Pricing for any additional options will be requested in a separate section of the bid and will not be included in the determination of the Bid Award.

**17. QUANTITIES**

The City of Raleigh reserves the right to adjust quantities as needed, and to add additional items and/or products as needed, as determined to be in the best interest of the City. The quantities stated herein, for term or multi-year contracts are estimated, and may change to be more or less over the term of the contract.

**18. PRICE ADJUSTMENTS**

**For Bids with fixed price contract periods**, it is the City’s intent to contract at a fixed price for a period of one (1) year, with an option to extend the contract for three (3) additional one (1) year periods. The price proposed by the bidder is to remain fixed for the first 1-year (12-month) period of the contract.

Any price increase or decrease will be adjusted to the latest yearly percentage increase in the All Urban Consumers Price Index (CPI-U) (National) as published by the Bureau of Labor Statistics, U.S. Dept. of Labor, or other appropriate agreed upon price index. The amount of the increase or decrease will be determined by the difference between the latest price index available ninety (90) days prior to the end of the current contract year in effect, and the price index for the same month one year prior.

Any requested price increase must be fully documented and submitted to the ITB Agent or the Procurement Manager at least sixty (60) days prior to the bid contract expiration date. Any approved price adjustment (increase or decrease) will then become effective beginning the next term period.

The City reserves the right to accept or to refuse any documented price adjustment submitted by the Supplier/contractor for any reason as determined to be in the best interest of the City. In the event the City does not accept the proposed price adjustment for the extended term, the Bid contract will not be renewed, and the City will rebid the product or item(s). Any Bid contract extension is subject to the continuation of need and usage by the City and the appropriation of funds.

**19. CONTRACT EXTENSIONS**

The City reserves the right to extend all bid contracts for up to three (3) additional one (1) year periods from the date of the award of the original bid, if agreed upon in writing by the contracted Supplier. The contract extension(s) may be for additional quantities or for an additional time period as agreed.

**20. TRADE SECRETS**

This ITB and all bidders' responses and proposals received are considered public information, except for trade secrets specifically identified in writing by the bidder, which will be handled according to State Statute or other laws. Any section of the bidder's response package that is deemed to be a trade secret by the bidder shall be submitted in an envelope clearly marked "**TRADE SECRET INFORMATION- DO NOT DISCLOSE.**" The City shall make a good faith effort to protect such confidential information.

**21. BID TABULATIONS**

Bidders wishing to obtain a bid tabulation prior to the award of the bid may view and download tabulations from the North Carolina Interactive Purchasing System (IPS) website at [North Carolina electronic Vendor Portal](#). From the City's homepage, select the following in order to view bid tabulations: Business and Development, Bids and RFP's / RFQ's, select the link to the North Carolina Interactive Purchasing System, Search Bid Number, enter the desired bid number, and select Search. Bid tabulations only reflect the bids as read at the time of the bid opening and should not be considered an award.

**22. ELECTRONIC PURCHASE ORDERS AND INVOICES**

The City expanded its electronic ordering and payment capabilities with additional eProcurement software that provides an "eMarket" with shopping-cart functionality for use by the City departments. The City's "RPOD Market" makes ordering and requesting purchase orders easier, and improves the efficiency of the City's accounting and payment system through the utilization of electronic methods for the delivery of purchase orders and the receiving of supplier cXML invoices. Jaggaer is the City's eProcurement solution provider.

**23. TERMS AND CONDITIONS**

Acceptance of the City's Purchase Order includes acceptance of all applicable Terms and Conditions. The City's Purchase Order Terms & Conditions are provided below for your information.

## CITY OF RALEIGH PURCHASE ORDER TERMS & CONDITIONS

1. **Supplier quotes or proposals are referenced for scope only.** City of Raleigh Purchase Order Terms & Conditions exclusively governs this purchase.
2. All invoices are to be sent by email to: [accountspayable@raleighnc.gov](mailto:accountspayable@raleighnc.gov) . Or, mail or deliver all invoices to the **City of Raleigh, Accounts Payable, PO Box 590, Raleigh NC 27602-0590.**
3. **Important: All invoices must include a unique invoice number and this Purchase Order number.** Invoices submitted without the unique invoice number or without the correct purchase order number will result in delayed payment.
4. Invoices for partial deliveries must be indicated as such.
5. The Supplier must provide separate invoices for each Purchase Order number.
6. **The City of Raleigh is not exempt from North Carolina State Sales Tax, Wake County Sales Tax, and Wake County Prepared Meals and Hotel Room Taxes.** These taxes must be correctly invoiced to the City for payment. Taxes shown on the purchase order are approximate.
7. The City of Raleigh is exempt from Federal Excise Tax. If any form of such tax is billed on the invoice, it must be shown as a separate item. Tax Exemption Certificates will be furnished upon request.
8. Payment term discounts will be deducted as provided for on the front of this Purchase Order or in accordance with the terms of your official quotation or bid. **Net purchases will be paid 30 days from the date of your invoice, or upon acceptance of goods whichever is later.**
9. **Important: All packages must bear the correct Purchase Order number on the outside of each package or shipping container.**
10. The City of Raleigh will not be responsible for any goods delivered without a Purchase Order having been issued.
11. The conditions of this order cannot be modified except by written amendment in the form of a "Corrected Purchase Order" which has been approved by the City of Raleigh's Purchasing Manager.
12. Any rejected materials will be returned to the Supplier at the Supplier's risk and expense.
13. In the event of a Supplier's failure to deliver or perform as specified, the City reserves the right to cancel the order or any part thereof, without prejudice to its other rights. The Supplier agrees that the City may return part or all of any shipment and may charge the Supplier with all reasonable losses or expenses sustained as a result of such failure to deliver or perform.
14. In case of default of the contractor, the City may procure the articles or services from other sources and charge the Supplier damages for any excess costs or other damages caused by the default.
15. It is agreed that the goods, materials, equipment or services provided shall comply with all Federal, State or local laws, and that the Supplier shall defend actions or claims brought, and save harmless the City, and/or its officials or employees, from loss, cost or damage by reason of actual or alleged failure to comply with such laws.

16. All prices must be F.O.B. Destination and delivered to the destination indicated on the front of the purchase order. Where specific purchase is quoted or negotiated F.O.B. Shipping Point, the Supplier is to prepay the shipping charges and add them to the invoice.
17. The risk of loss and damage to the goods which are the subject of this order shall be the Supplier's until the goods are delivered to the destination set out in the order and accepted by the purchaser or its representative.
18. The Supplier acknowledges that it is the policy of the City of Raleigh to avoid commercial promotion of products used by the City or the Suppliers of such products. The Supplier accordingly agrees not to solicit, use, or disseminate commercial advertisement founded upon the City's purchase and/or use of the goods which are the subject of this order, and specifically agrees not to seek or use for advertising purposes the endorsement of goods or products by City officers or employees.
19. The City may, at any time, insist upon strict compliance with these terms and conditions, notwithstanding any previous customer, practice or course of dealing to the contrary. **Acceptance of the order includes acceptance of all terms, conditions, prices, delivery instructions and specifications as shown on this order or attached to and made a part of this order.**
20. All matters relating to this Purchase Order shall be governed by the laws of the State of North Carolina, without regard to its choice of law provisions, and venue for any action relating to this Contract shall be Wake County Civil Superior Court or the United States District Court for the Eastern District of North Carolina, Western Division.
21. Notwithstanding any other provisions of this Purchase Order, this Purchase Order and all materials submitted to the City by the Supplier are subject to the public records laws of the State of North Carolina and it is the responsibility of the Supplier to properly designate materials that may be protected from disclosure as trade secrets under North Carolina law as such and in the form required by law prior to the submission of such materials to the City. Supplier understands and agrees that the City may take any and all actions necessary to comply with federal, state, and local laws and/or judicial orders and such actions will not constitute a breach of the terms of this Purchase Order. To the extent that any other provisions of this Purchase Order conflict with this paragraph, the provisions of this section shall control.
22. **Non-discrimination.** To the extent permitted by North Carolina law, the parties hereto for themselves, their agents, officials, employees and servants agree not to discriminate in any manner on the basis of race, color, creed, national origin, sex, age, handicap, or sexual orientation with reference to the subject matter of this Contract. The parties further agree, to the extent permitted by law, to conform with the provisions and intent of City of Raleigh Ordinance 1969-889, as amended. This provision is hereby incorporated into this Contract for the benefit of the City of Raleigh and its residents, and may be enforced by action for specific performance, injunctive relief, or other remedy as provided by law. This provision shall be binding on the successors and assigns of the parties with reference to the subject matter of this Contract.
23. **Insurance.** If performing services under this Purchase Order the Supplier agrees to maintain, on a primary basis and at its sole expense, at all times during the life of this Purchase Order the following coverages and limits. The requirements contained herein, as well as City's review or acceptance of insurance maintained by Supplier is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by Supplier under this Purchase Order:
  - a) **Workers' Compensation Insurance.** Supplier agrees to maintain Worker's Compensation Insurance in accordance with North Carolina General Statute Chapter 97 and with limits of no less than \$1,000,000 each accident, each employee and policy limit.

- b) **Commercial General Liability.** Combined single limit of no less than \$1,000,000 each occurrence and \$2,000,000 aggregate. Coverage shall not contain any endorsement(s) excluding nor limiting Product/Completed Operations, Contractual Liability or Cross Liability.
- c) **Commercial Automobile Liability.** Limits of no less than \$1,000,000 Combined Single Limit. Coverage shall include liability for Owned, Non-Owned and Hired automobiles. In the event Supplier does not own automobiles, Supplier agrees to maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Auto Liability policy. Automobile coverage is only necessary if vehicles are used in the provision of services under this Purchase Order and/or are brought on a COR site.
- d) **Additional Insured.** Supplier agrees to endorse the City as an Additional Insured on the Commercial General Liability. The Additional Insured shall read 'City of Raleigh as its interest may appear'.
- e) **Umbrella or Excess Liability.** Supplier may satisfy the minimum liability limits required above under an Umbrella or Excess Liability policy. There is no minimum Per Occurrence limit of liability under the Umbrella or Excess Liability, however, the Annual Aggregate limits shall not be less than the highest 'Each Occurrence' limit for required policies. Supplier agrees to endorse City of Raleigh as an 'Additional Insured' on the Umbrella or Excess Liability, unless the Certificate of Insurance states the Umbrella or Excess Liability provides coverage on a 'Follow- Form' basis.
- f) **Professional Liability.** Limits of no less than \$1,000,000 each claim. This coverage is only necessary for professional services such as engineering, architecture or when otherwise required by the City. The City reserves the right to require a Certificate of Insurance meeting the minimum coverage and requirements of this section. Certificates of Insurance shall provide a minimum thirty (30) day endeavor to notify, when available, by Supplier's insurer. If Supplier receives a non-renewal or cancellation notice from an insurance carrier affording coverage required herein, or receives notice that coverage no longer complies with the insurance requirements herein, Supplier agrees to notify the City within five (5) business days with a copy of the non-renewal or cancellation notice, or written specifics as to which coverage is no longer in compliance. The Certificate Holder address should read:

City of Raleigh  
Post Office Box 590  
Raleigh, NC 27602-0590

All insurance companies must be authorized to do business in North Carolina and be acceptable to the City of Raleigh's Risk Manager.

24. **Indemnity.** To the fullest extent permitted by law, except to the extent caused by the sole negligence or willful misconduct of the City, the Supplier shall indemnify and hold and save the City, its officers, agents and employees, harmless from liability of any kind, including all claims, costs (including defense) and losses accruing or resulting to any other person, firm, or corporation furnishing or supplying work, services, materials, or supplies in connection with the performance of this Purchase Order, and from any and all claims, costs (including defense) and losses accruing or resulting to any person, firm, or corporation that may be injured or damaged by the Supplier in the performance of this Purchase Order. This representation and warranty shall survive the termination or expiration of this Purchase Order. The Supplier shall indemnify and hold and save the City, its officers, agents and employees, harmless from liability of any kind, including claims, costs (including defense) and expenses, on account of any copyrighted material, patented or unpatented invention, articles, device or appliance manufactured or used in the performance of this Purchase Order.

25. **Intellectual Property.** All intellectual property, including, but not limited to, patentable inventions, patentable plans, copyrightable works, mask works, trademarks, service marks and trade secrets invented, developed, created or discovered in performance of services under this Purchase Order shall be the property of the City. Copyright in and to any copyrightable work, including, but not limited to, copy, art, negatives, photographs, designs, text, software, or documentation created as part of the Supplier's performance of services under this Purchase Order shall vest in the City. Works of authorship and contributions to works of authorship created by the Supplier's performance of services under this Purchase Order are hereby agreed to be 'works made for hire' within the meaning of 17 U.S.C. 201.
26. **Force Majeure.** Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by an act of war, hostile foreign actions, nuclear explosion, earthquake, hurricane, tornado, or other catastrophic natural event or act of God. Except at otherwise provided in any environmental laws, rules, regulations or ordinances applicable to the parties and the services performed under this Purchase Order, neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by an act of war, hostile foreign actions, nuclear explosion, earthquake, hurricane, tornado, or other catastrophic natural event or act of God. Either party to the Purchase Order must take reasonable measures and implement reasonable protections when a weather event otherwise defined as a force majeure event is forecast to be eligible to be excused from the performance otherwise required under this Purchase Order by this provision.
27. **Cancellation.** The City may terminate this Purchase Order at any time by providing written notice to the Supplier. Supplier shall cease performance immediately upon receipt of such notice. In the event of early termination, Supplier shall be entitled to receive just and equitable compensation for costs incurred prior to receipt of notice of termination and for the satisfactory work completed as of the date of termination and delivered to the City. Notwithstanding the foregoing, in no event will the total amount due to Supplier under this section exceed the total amount due Supplier under this Purchase Order.
28. **Miscellaneous.** The Supplier shall be responsible for the proper custody and care of any property furnished or purchased by the City for use in connection with the performance of this Purchase Order, and will reimburse the City for the replacement value of its loss or damage. The Supplier shall be considered to be an Independent Contractor and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. Nothing herein is intended or will be construed to establish any agency, partnership, or joint venture. Supplier represents that it has, or will secure at its own expense, all personnel required in performing the services under this Purchase Order. Such employees shall not be employees of or have any individual contractual relationship with the City.
29. **E-Verify.** I understand that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25 et seq. I am aware of and in compliance with the requirements of E-Verify and Article 2 of Chapter 64 of the North Carolina General Statutes. To the best of my knowledge, any subcontractors employed by me as a part of this contract are in compliance with the requirements of E-Verify and Article 2 of Chapter 64 of the North Carolina General Statutes.
30. **Iran Divestment Act Certification.** Contractor certifies that, as of the date listed below, it is not on the Final Divestment List as created by the State Treasurer pursuant to N.C.G.S. § 147-86.55, et seq. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. § 147-86.59, Contractor shall not utilize in the performance of the contract any subcontractor that is identified on the Final Divestment List.
31. **Companies Boycotting Israel Divestment Act Certification.** Contractor certifies that it has not been designated by the North Carolina State Treasurer as a company engaged in the boycott of Israel pursuant to N.C.G.S. 147-86.81.

# CITY OF RALEIGH

## MINIMUM SPECIFICATIONS

### SECTION 40 05 62 PLUG VALVES

#### PART 1 – GENERAL

##### 1.01 SUMMARY

- A. Section Includes: Eccentric plug valve with electric valve actuator for the purpose of providing isolation and/or throttling control in wastewater applications.

##### 1.02 REFERENCES

- A. ASTM A126 – Class B Gray Iron Castings for Valves, Flanges and Pipe Fittings.
- B. ASME B16.1 – Pipe Flanges and Flanged Fittings
- C. AWWA C517 – Resilient-Seated Cast-Iron Eccentric Plug Valves
- D. AWWA C111 – Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

##### 1.03 SUBMITTALS

- A. Submit to Engineer materials required to establish compliance with this Section. Equipment Submittals shall include at least the following:
  - 1. Valve tag number.
  - 2. Manufacturer and supplier.
  - 3. Address at which equipment will be fabricated or assembled.
  - 4. Drawings showing assembly details, materials of construction and dimensions.
  - 5. Descriptive literature, bulletins and/or catalogs of the equipment.
  - 6. Total weight of each item.
  - 7. A complete bill of materials.
  - 8. Additional submittal data, where noted with individual pieces of equipment.
- B. Test Reports:
  - 1. Provide certified hydrostatic test data, per manufacturer's standard procedure or MSS-SP-61 for valves.
- C. Certificates:
  - 1. For each valve specified to be manufactured, tested and/or installed in accordance with AWWA and other standards, submit an affidavit of compliance with appropriate standards, including certified results of required tests and certification of proper installation.

## D. Manufacturer's Installation and Application Data

## E. Operating and Maintenance Data:

1. Operating and maintenance instructions shall be furnished with instructions prepared specifically for this installation and shall include required cuts, drawings, equipment lists, descriptions and other information required to instruct operating and maintenance personnel unfamiliar with such equipment

## 1.04 QUALITY ASSURANCE

- A. Valves and appurtenances shall be products of well-established firms who are fully experienced, minimum ten years, reputable and qualified in manufacture of equipment to be furnished.
- B. Valves and Actuators shall be warranted by the manufacturer for defects in materials and workmanship for a period of two years (24 months) from date of shipment.
- C. Each valve and actuator shall be assembled, adjusted and tested as a unit by the valve manufacturer in accordance with AWWA C517.

## PART 2 – PRODUCTS

## 2.01 ECCENTRIC PLUG VALVES

## A. Manufacturers:

1. DeZurik, Pratt, GA Industries, Kennedy or pre-approved equal

## B. Description:

## 1. Type:

- a. Offset disc type
- b. Non-lubricated
- c. Serviceable (able to be repacked) under full line pressure
- d. Eccentric.
- e. Capable of sealing in both directions at the rated pressure
- f. Unobstructed flow path when open
- g. Drop tight shut-off to the full valve rating with pressure on either side of the plug.

## 2. Body:

- a. 30,000-psi tensile strength
- b. Top entry, bolted bonnet
- c. Body shall be cast with integral connections conforming to connecting piping

3. Plug:
  - a. To be removable without removing the valve from the line.
  - b. To have an integral upper and lower shaft:
    - 1) seals on the upper and lower journals to prevent entrance of solids into the journals.
  - c. One piece for all valves.
4. Bearings:
  - a. Permanently lubricated
5. Minimum Working Pressure:
  - a. 175 psig for sizes 4-inch to 12-inch (inclusive) and 150 psi for sized 14-inch and larger.
  - b. At the above rated minimum working pressures, certified by the manufacturer as permitting zero leakage for a 5-minute duration with full pressure applied in either direction.
6. Maximum Process Fluid Temperature: 80 deg. F
7. Ports:
  - a. Configuration: Rectangular or Round.
  - b. Minimum Port Area: 100 percent of nominal pipe area (full port)
8. Seats:
  - a. Full 360-degree seating by contact of a resilient seating material on the plug mating with welded-in seating surface in the body.
  - b. Screw in body seats not acceptable.
  - c. Resilient and of the continuous interface type having consistent opening and closing torques.
  - d. Non-jamming in the closed position.
9. Stem Bearings: Self-lubricating.
10. Stem Seals:
  - a. Type: V-ring.
  - b. Externally adjustable and repackable without removing the bonnet from the valve, or self-adjusting.
11. Packing and Gland: Accessible and externally adjustable.
12. End Connections:
  - a. Flanged: Comply with ASME B16.1 and B16.42.

## 13. Actuation:

- a. All valves larger than 8" shall be installed with gear assisted manual actuators.
  - 1) Comply with AWWA C504.
  - 2) All gearing shall be work or helical gear type, enclosed in a cast iron or ductile iron housing, with outboard seals to protect the bearings and other internal components.
  - 3) All gears shall be hardened steel, machine cut & mated.
  - 4) The actuator shaft and gear quadrant shall be supported on permanently lubricated bronze bearings.
  - 5) Actuators shall be filled with waterproof grease.
  - 6) Input and Output Shafts: Sealed with greased, waterproof machine shaft seals.
  - 7) Input shaft and fasteners shall be stainless steel.
  - 8) An extended stainless steel stem shall be provided between the gear actuator and the floor stand.
  - 9) Provide adjustable limit stops for both opening and closing and a clearly marked position indicator on top of the actuator.

## C. Materials:

## 1. Body and Torque Tube:

- a. Cast iron, ASTM A126 Class B or Ductile iron, ASTM A536.
- b. Lining: Epoxy.

## 2. Plug:

- a. Ductile iron, ASTM A536, Grade 65-45-12 or Cast-iron ASTM A126, Grade B.
- b. Lining: Resilient coating, as recommended by valve manufacturer for service conditions.

## 3. Seats: Minimum 95% pure Nickel.

## 4. Stem: Type 316 stainless steel.

## 5. Stem Bearings: Stainless steel.

## 6. Seals: PTFE.

## 7. Connecting Hardware: Type 316 stainless steel.

## D. Finishes: Valves shall be provided with factory finishes that are suitable for the service and environment the valve shall be installed within.

## 2.02 ELECTRIC VALVE ACTUATORS

- A. Electric Valve Actuators shall be modulating service. Acceptable models/manufacturers shall be IQ or IQT series as manufactured by Rotork, Bettis XTE 3000 as manufactured by EIM Controls, or MX/QX series as manufactured by Limitorque.
- B. Performance Requirements
1. The actuators shall be designed for outdoor service and shall be capable of mounting in any position.
  2. Torque capacity of the actuators shall be sufficient to operate the valves with the maximum pressure differential as specified, with a safety factor of 1.5. Actuators in modulating service will be selected such that the required dynamic valve torque is no more than 60% of the electric actuator's maximum rated breakaway of torque.
  3. Operating time for full limits of travel shall be not more than 2 seconds per inch diameter of the valve, +/- 50 percent through 20 inches; +/- 30 percent for valves 24 inches and larger. Operating time shall not be less than 60 seconds for all modulating valves.
  4. Actuators shall be capable of operating in ambient temperatures ranging from 0 degrees F – 160 degrees F.
  5. For modulating actuators, the gearing and motor shall be capable of 1200 starts per hour without overheating.
- C. The actuators shall include, in one integral housing, individual compartments for the motor, gearing, wiring terminals, and control circuits. The terminal compartment shall be separated from the inner electrical components of the actuator by means of a watertight seal. The inner seal shall protect the motor and all other internal electrical elements of the actuator from entrance of moisture and dust when the terminal cover is removed. Double cartridge shaft seals shall be provided on the hand wheel and output shafts for weatherproof protection. All external fasteners shall be stainless steel. Compartments shall be provided with moisture and dust-proof rigid cast covers meeting NEMA 6, certified to submergence in 6 ft of water for 30 minutes. Actuators located in classified areas shall be suitable for use in Class 1, Division 1, Group D environments.
- D. The actuators shall be provided with externally operable and lockable 480VAC circuit breakers integral to the control housing.
- E. Actuators shall be mounted to a manufacturer standard operating stand or torque tube.
- F. All gearing shall be hardened alloy steel or bronze and shall be rated at twice the output torque of the operator and shall be designed to withstand the stall torque of the motor without failure. Output drive gearing shall consist of a worm shaft and worm gear pinion operating in an oil bath. The worm gear pinion shall be alloy bronze. Worm gear drive shall be self-locking to prevent creeping of the valve disc in an intermediate position. Heavy-duty grease or oil lubrication shall protect gearing and sealed ball bearings of the main shaft for five years without changing. Motor reduction gearing shall be spur or planetary gearing and shall allow for field repair and change in gear ratio. For quarter turn applications, overtravel of the operator shall be prevented by internal mechanical stops cast into the actuator.

- G. An LCD Screen shall be furnished to continuously indicate the position of the valve at and between the fully open and fully closed positions in 1% increments. The indicator shall be driven by gearing driven off the main worm gear pinion and shall operate when the actuator is in either the electrical mode or manual mode.
- H. A handwheel shall be permanently attached for manual operation. A gear assembly shall be provided between the handwheel and the worm shaft if required to reduce the force necessary to operate the handwheel to less than 40 pounds. A positive declutch mechanism shall engage the handwheel when required. When the actuator is set in the declutched position for handwheel operation, it shall return automatically to electric operation when actuator motor is energized. The handwheel shall not rotate during electric operation nor shall a fused motor prevent handwheel operation.
- I. The drive motor shall be specifically designed for actuator service and shall be characterized by high starting torque and low inertia. Motors shall be 460 volts, three phase, 60 Hz AC reversible squirrel cage induction type motors. Motors shall be totally enclosed, non-ventilated, with NEMA Class F insulation minimum (Class H for modulating actuators) and a maximum continuous temperature rating of 120 degree C (rise plus ambient). A 120 VAC space heater shall be provided in the motor compartment. The electric motor shall have a time rating of at least 15 minutes at 104°F (40°C) or twice the valve stroking time, whichever is longer, at an average load of at least 33% of maximum valve torque. Motor bearings shall be permanently lubricated by premium lubricant. The motor shall have plug and socket electrical connection to facilitate easy removal and replacement. The actuator shall include a device to ensure that the motor runs with the correct rotation for the required direction of valve travel with either phase sequence of the three-phase power supply connected to the actuator. The motor shall include single phase protection. A suitable thermal protection device shall be incorporated in the motor or motor starter circuits, connected to a tripping device. Fast acting fuses shall be provided to protect solid state components. The motor shall be capable of starting against the rated load in either the open or close direction when voltage to the motor terminals is plus or minus ten (10) percent of nameplate rating.
- J. Actuators shall be furnished with solid state reversing starters utilizing thyristors.
- K. Leads from the motor shall be brought to the control circuit (limit switch) compartment without external piping or conduit box. An adequately sized space heater shall be installed in the control circuit compartment to aid in the prevention of damage resulting in from condensation. The following items shall be located in the control circuit compartment.
1. Torque limit switches shall be provided to de-energize the motor control circuit in the event of a stall when attempting to unseat a jammed valve and when torque is exceeded during valve travel. Each actuator shall have an open direction torque switch and a close direction torque switch. The torque switches shall be mechanically operated and able to be set in torque units. Torque switches shall be calibrated prior to the actuator's assembly to the valve.
  2. Travel limit switches shall be provided to de-energize the motor control circuit when the actuator reaches the limits of travel in the open and close directions. The limit switch drive shall be of the counter gear type and "in step" with the actuator output drive at all times in either the electrical or manual mode of operation. A minimum of six (6) contacts, three (3) normally open and three (3) normally closed, shall be supplied at each end of valve travel. Four (4) additional contacts shall be provided to report end of travel or any desired position between ends of travel
- L. Modulating actuators shall have a position feedback potentiometer mounted directly to the valve actuator gearing inside the gearing compartment. The potentiometer shall provide a 4-20 mA signal corresponding to valve position. Modulating valve actuators shall be designed to respond to either a

4-20mADC analog signal or a digital pulse signal as required to coordinate with the existing plant SCADA system.

1. Modulating valve actuators designed to respond to a 4-20mADC signal shall be provided with a valve positioner which shall position the valve proportional to an externally generated 4-20mADC signal. The valve positioning control circuitry shall position the valve by comparing the command signal with the present valve position as indicated by the feedback potentiometer. The positioner shall be field adjustable to fail to the “open,” “closed,” or “last” position on loss of 4-20 mADC command signal.
  2. Modulating valve actuators designed to respond to “pulse” open/close signals shall operate the valve during the time the open or close pulse signal is high. Modulating actuators designed to respond to “pulse” open/close signals shall have the latching circuitry described above for open/close actuators disabled.
- M. The electrical terminals shall be housed in a double sealed terminal compartment isolated from the rest of the actuator components. The actuators shall be designed to operate from a single 480VAC, 3-phase source. The actuators shall be furnished with fuses inside of the terminal compartment. A quantity of two – ¾ inch NPT conduit entries shall be furnished
- N. Actuators shall contain wiring and terminals for the following control functions. All dry contacts shall be rated for 5A at 250VAC.
1. Open, Close, and Stop commands from external dry contacts (utilizing internal 24VDC [120VAC] power supply) and/or from an external signal of 12V to 120V. The inputs for the open, close, stop signals shall be field selectable to be respond to either maintained or momentary remote signals. In momentary mode, the actuator shall have internal latching circuitry that causes the operator to drive the valve to its limit of travel upon receipt of the momentary contact signal unless a stop signal is received.
  2. Emergency override input from a normally closed or normally open contact. The actuator shall either open or close (field selectable) upon receiving the emergency override input.
  3. Remote Local-Off-Remote selector switch, Open/Close pushbuttons, and Open/Closed pilot lights for a remote manual control station (see below). The remote Local-Off-Remote selector switch and Open/Close pushbuttons shall be a dry contact input to the actuator control circuitry. The Open/Closed pilot lights shall be powered from the valve actuator control power.
  4. Four (4) unpowered contacts shall be provided which can be selected to indicate valve “Opened” and “Closed” position, “Remote” status of the actuator, and fail status of the actuator. The fail status contacts shall activate upon motor overtemperature and actuator over torque as a minimum.
  5. Terminals for 4-20mADC position command and 4-20mADC position feedback as described above for modulating actuators.
- O. Local Controls
1. Actuators shall be furnished with a Local-Off-Remote selector switch; Open, Close, and Stop pushbuttons for local control; a red lamp indicating closed and a green lamp indicating open. L-O-R switch shall be padlockable in any of the three positions.

- a. When the LOR is in the “Local” position, open/close control shall be by the open and close pushbuttons on the actuator. The stop push button shall stop the actuator travel.
  - b. When the LOR is in the “Off” position, the actuator shall not operate.
  - c. When the LOR is in the “Remote” position, the actuator shall be controlled by remote inputs from the PLC or from the remote manual controls station.
2. The local controls shall be arranged so that the direction of travel can be reversed without the necessity of stopping the actuator.
- P. Operators shall be furnished with communication cards to allow direct digital control of the electric actuator position and to receive actuator position over the network. Communication protocol shall be MODBUS per the latest MODICON standard. Two MODBUS modules shall be provided in each actuator to allow fully redundant communications capability. If one module fails, the system shall automatically back up to the other module. The modules shall be allowed to simultaneously communicate on two separate MODBUS networks. The following I/O shall be made available in the actuator registers for read/write access by the PLC [DCS]:
1. Valve position (0-100%)
  2. Valve position command (0-100%)
  3. OPEN Command
  4. CLOSE Command
  5. STOP Command
  6. Actuator pulse (Allows valve time of travel to be increased/reduced)
  7. REMOTE selected (Indicates L-O-R switch is in the REMOTE position)
  8. LOCAL selected
  9. OPEN position indication (Valve is in open position)
  10. CLOSE position indication
  11. Center column moving

## 2.03 ACCESSORIES

### A. GASKETS

1. Provide two gaskets per valve supplied. Gaskets shall be 1/8-in thick full face SBR per number and size of flange provided.
2. Provide one spare gasket of each size provided.

### B. CONNECTORS

1. Bolting and washers shall be alloy stainless steel ASTM A 193/A 193M Grade B8 hex head bolts and alloy austenitic stainless steel ASTM A 194/A 194M Grade 8 hex head nuts.

2. Provide a complete set of bolts, nuts and washers for each valve, quantity and size as recommended by the valve manufacturer for the number and size of flange provided.
3. Provide one spare sets of bolts, washers and nuts.

#### 2.04 SOURCE QUALITY CONTROL

- A. Testing: Hydrostatic Test Per ANSI B16.1 and B16.5.
- B. Submit an affidavit of compliance stating that the valves have been manufactured and tested in accordance with AWWA C517 and specifically list all exceptions.

### PART 3 – EXECUTION

#### 3.01 INSTALLATION

- A. According to AWWA C517.
- B. Horizontal Piping: Stem horizontal, plug opening to crown of body.
- C. Vertical Piping: Plug at top when closed.
- D. Plugs: On top when open and on pressure side when closed.

#### 3.02 SHOP TESTING

- A. Conduct a complete functional check of each unit. Correct any deficiencies found in shop testing prior to shipment.
- B. Submit written certification that:
  1. Shop tests for the electrical system and all controls were successfully conducted.
  2. Electrical system and all controls provide the functions specified and required for proper operation of the valve operator system.
- C. Each actuator shall be performance tested, and individual test certificates shall be supplied free of charge. The test equipment shall simulate each typical valve load, and the following parameters should be recorded:
  1. Current at maximum torque setting
  2. Torque at maximum torque setting
  3. Flash Test Voltage
  4. Actuator Output Speed or Operating Time
  5. In addition, the test certificate should record details of specification, such as gear ratios for both manual and automatic drive, closing direction, and wiring diagram code number.
  6. Verification of actuator torque rating with valve.

3.03 FIELD TESTING

A. Field testing shall include the following requirements:

1. Valve actuators shall be field-tested together with the associated valves.
2. Test all valves at the operating pressures at which the particular line will be used.
3. Test all valves for control operation as directed.
4. Optimization of opening and closing times of the valves. Valve opening and closing times shall be adjusted based on process requirements to optimize operation of the valves. Final valve opening and closing times as determined by field tests shall be approved by the Owner prior to final acceptance of the system.
5. Include a functional check of the entire valve operator system and all system components.
6. Demonstrate that the valve operator system performs according to specifications and that all equipment, valves, controls, alarms, interlocks, etc., function properly.
7. Certification of Equipment Compliance: After the field tests are completed and passed, submit affidavit declaring that the valves and electric valve actuators work as specified and designed.

3.04 VALVE SCHEDULE

SIZE	QUANTITY	LOCATION	USE
48"	1	PRIMARY EFFLUENT METERING VAULT	PRIMARY FLOW CONTROL

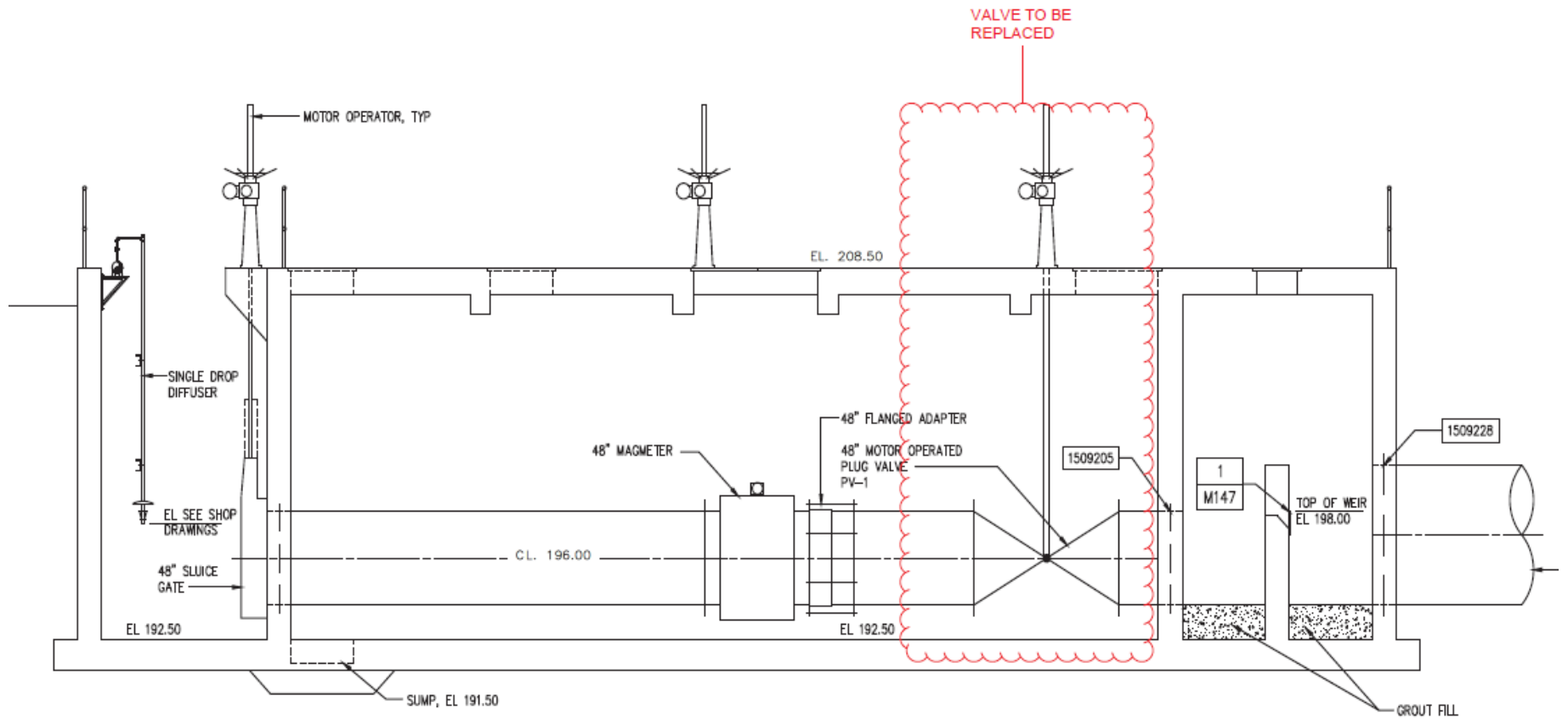
END OF SECTION 40 05 62

**Please sign and date to certify compliance with the minimum specifications and confirm that all required documents identified therein are included with your bid.**

COMPANY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 (President/Authorized Officer)

TITLE: \_\_\_\_\_



## REFERENCES

Provide at least three (3) references, other than the City of Raleigh, for which your company has provided goods and services of substantially the same features and quantity to those solicited herein. References shall be checked during the evaluation period to determine that the goods provided are substantially similar to those bid herein and that the supplier's performance has been satisfactory. Information obtained will be considered in evaluation of the bids. Bidders are cautioned to provide accurate information. Misleading information presented in the references may result in a rejection of the proposal.

**1. Agency or Company Name:** \_\_\_\_\_

Business Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Contact Telephone Number: \_\_\_\_\_

Contact E-Mail Address: \_\_\_\_\_

**2. Agency or Company Name:** \_\_\_\_\_

Business Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Contact Telephone Number: \_\_\_\_\_

Contact E-Mail Address: \_\_\_\_\_

**3. Agency or Company Name:** \_\_\_\_\_

Business Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Contact Telephone Number: \_\_\_\_\_

Contact E-Mail Address: \_\_\_\_\_